



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF APPLICANT COMPLIANCE
RISK REDUCTION ENGINEERING LABORATORY

20269



DATE: June 11, 1993

SUBJECT: Technical Review of the "Draft Feasibility Study Report
McIntosh Plant Site Olin Corporation McIntosh, Alabama"

FROM: Mark C. Meckes *[Signature]*
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TO: Cheryl W. Smith
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The subject document reports the findings of a feasibility study conducted by Woodward-Clyde Consultants for the Olin Corporation. In general the document is well written. However, there are some questions which remain regarding the Remedial Investigation findings and delineation of the extent of contamination at Olin's McIntosh facility (please see my memo to you dated March 24, 1993). I believe it was premature to address OU-2 at this time since additional information must be collected. Therefore, this review will not address specific items detailing remedial options for that operating unit. Furthermore, this Feasibility Study does not address all the contaminated areas which were identified in the Draft RI Report. Only the CPC landfill, the old CPC plant site, the wastewater ditch and the basin were addressed in this document. Are these specific areas of the plant the only areas considered to be a continuing source of contamination?

The subject document contains five sections. These are: Section 1.0, introduction; Section 2.0, Identification and Screening of Technologies; Section 3.0, Development of Screening Alternatives; Section 4.0, Detailed Analysis of Alternatives; and Section 5.0, References. Section 1.0 discusses site investigations and history. Of note is the fact that this section identifies areas of concern which will be addressed in other sections of this document. These include for Operating Unit-1: The CPC Landfill, the former CPC plant area, and ground water in the alluvial aquifer. The sanitary landfill, lime pond, mercury cell plant, old plant landfill drainage ditch, and the well sand area were not considered to be continuing sources of contamination even though mercury and/or chlorinated benzene isomers were detected in soil samples obtained from these areas. Fate and transport of contaminants of concern, a summary of human health baseline risk assessment, and a summary of ecological assessment were included in Section 1.0.

Section 2.0 presents information on the identification and screening of technologies. In section 2.2 the author states that only ARARs will be considered for determining clean-up goals since all excess lifetime cancer risks and hazard indexes for adult/adolescent resident/trespassers and site industrial workers were below the risk based remedial action objectives. I did not confirm this claim, but accepted it as a starting point to assess the screening of technologies. Section 2.3 addresses general response actions for OU-1 and OU-2. On page 2-24 the former CPC plant area is addressed. This amounts to extending the cap that currently exists over the CPC plant area. The nature and extent of this cap were not defined here or anywhere else in this document. The authors state that the limits of the cap will be determined during final design. Will the nature of the cap be determined then also? Section 2.4 is an evaluation of remedial technologies and process options. The retained technologies are those which are known to be effective for the contaminants of concern.

Section 3.0 is the Development and Screening of Remedial Action Alternatives. Treatment scenarios were developed in this section for each operating unit. The groundwater treatment alternatives appear to be sound and reasonable. The alternative screening for the CPC landfill concerns me. Several remedial options were screened out during this evaluation. The authors claim that engineering judgement was used to screen out certain

options. However, these judgements are based upon data taken from four borings, one at each corner of the landfill and a resistivity survey. This data showed that the concentration of contaminants varied considerably from one side of the landfill to the other. How do we know that higher concentrations of contaminants do not lie within the center of the landfill? I agree with the authors that a high clay content will affect acid extraction regardless of contaminant concentration and therefore accept their judgement in screening out acid extraction as difficult to implement. I am not familiar with the availability of off-site incineration for that area of the country. However, I do know that off-site incineration of low BTU wastes may cost in excess of \$2000 per ton. Therefore, I will assume that the authors are correct in their assessment that off-site incineration costs would be excessive. I cannot agree with the authors evaluation of how the wastewater ditch sediments would be handled. I agree with retaining option C1 and screening out C2, however, it is unclear to me how implementation of other options would increase in difficulty. Certainly if temporary routing of the ditch can be accomplished as in C1, similar activities could mimic that operation without greater difficulty.

Section 4.0 is the Detailed Analysis of Alternatives. The criteria used for this analysis are described in the introduction and are appropriate. The approach used here is sound however, there are several comments I would like to make.

Specific comments:

Section 4.2.1.3 Alternative C3. Horizontal extraction wells are still considered innovative. Placement of the screen is critical to ensure that it collects the dense mercury containing brine. Therefore, if this option is pursued additional characterization work is recommended which will pin point the brine layer.

Section 4.2.2.2 Soil Alternative D: In Situ Stabilization-Solidification/Containment. The authors estimate that solidification would increase the volume of waste by 20%. It has been our experience that solidification may increase the volume by over 100%. The volume increase must be assessed by conducting appropriate treatability studies.

Same Section. The authors failed to address the potential of air emissions from the volatilization of organic and inorganic wastes caused by the heat of reaction. This may impact implementation of this remedy. The same concerns are true for Alternative E.

Section 4.2.3.8 Wastewater Ditch Alternative E:

Excavation/Disposal. The cost associated with this option is not well defined. If digging a new discharge trench costs \$4.2 million why will excavation for off-site disposal cost \$11.6 million (including process water diversion).

Costs developed in Appendix D appear to be within the +50 to -30% accuracy range.

If you have questions regarding this review please call me at (513) 569-7348.